

cleaning. Claim 1 specifically recites the program to introduce inert gas to regulate the pressure prior to cleaning. Kao clearly fails to teach this aspect.

Further, the Examiner asserts that Frankel discloses the temperature of the susceptor to be 500-800°C, and both Frankel and Kao suggest the preferred temperature for cleaning to be 550-600°C. However, neither Frankel nor Kao teaches reducing the temperature prior to cleaning. In particular, Kao specifically states "*the temperature need not be lowered to avoid over-etching of the chamber's components*" (column 17, lines 62-64). Kao clearly teaches away from lowering the temperature for cleaning. Additionally, Frankel specifically states "*constructing the heater 25 of aluminum nitride effectively eliminates this problematic reaction during cleaning*" (column 31, lines 65-67). Frankel clearly teaches away from taking special care during cleaning when the susceptor is made of aluminum nitride, and Frankel does not even suggest reducing the temperature. Incidentally, in either reference, raising the temperature for cleaning is equally possible (e.g., processing at 500°C and cleaning at 600°C). Mere possibility is not a suggestion and not the standard for obviousness. There is no specific suggestion to reduce the temperature for cleaning. Further, neither reference teaches reducing the temperature prior to activation of cleaning. Even if in either reference, the temperature is possibly reduced for cleaning, the reduction of temperature could equally occur during cleaning. There is no suggestion to reduce the temperature prior to activation of cleaning.

Furthermore, Claim 1 as amended herein recites the program to reduce the temperature to 470°C or less prior to cleaning, which even more distinguishes the claimed invention from the references. There is no suggestion in the prior art to install a program to reduce the temperature for cleaning to 470°C or lower.

In conclusion, a combination of Frankel and Kao could not lead to Claim 1 as amended herein. Claim 1 could not be obvious over Frankel and Kao, and at least for this reason, the remaining dependent claims also could not be obvious over the references. Applicant respectfully requests withdrawal of this rejection.

CONCLUSION

In light of the Applicants' foregoing Remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which

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might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below. Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 2-3 and 11-20 have been canceled.

Claim 1 has been amended as follows:

1. (Thrice amended) A thin film forming apparatus comprising:

a reaction chamber for forming at a film formation temperature a thin film on a workpiece placed on a susceptor provided in the reaction chamber, said susceptor being made of aluminum nitride and provided with a heater for heating the workpiece, said reaction chamber being provided with a conveyer for loading and unloading the workpiece into and from the reaction chamber; and

a cleaning device for cleaning unwanted deposits adhering to the inside of the reaction chamber at predetermined intervals, said cleaning device comprising:

(i) a cleaning gas controller for introducing a cleaning gas into the reaction chamber and evacuating the reaction chamber after the cleaning treatment;

(ii) a cleaning gas activator for activating the cleaning gas in radical form; and

(iii) a temperature and timing controller comprising a program including a cleaning sequence which is activated after completion of film formation, said cleaning sequence programmed to (1) introduce an inert gas to the reaction chamber to obtain a predetermined pressure, (2) reduce the temperature of the susceptor at a predetermined rate for cleaning, at the predetermined pressure, (3) when reaching a cleaning temperature of 470°C or lower which is lower than the film formation temperature, actuate the cleaning gas controller and the cleaning gas activator, and (4) evacuate the reaction chamber.